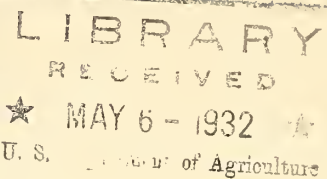


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SPECIFICATIONS FOR AIRPLANE OBSERVATION FLIGHTS.



For making one airplane observation flight daily, Sunday and holidays included, for the Weather Bureau during the fiscal year July 1, 1932 to June 30, 1933, inclusive, in accordance with the following schedule and conditions:

For a daily flight started at 5:00 a.m. (75th Meridian Time) to 16,500 feet above ground. (By "starting" a flight is meant the actual take-off of the airplane. The word "ground" refers to the field at which the flights are to be started.)

Cost per flight \$

I SCHEDULE OF FLIGHTS-

- (a) Although flights must be started as a rule at the time specified, latitude in starting them earlier or later will be allowed under conditions set forth hereinafter.
- (b) Flights must be started not later than 5:30 a.m. (75th Meridian Time) nor earlier than 4:00 a.m. (75th Meridian Time) unless weather conditions are unfavorable as specified under II WEATHER CONDITIONS, of these specifications.
- (c) If unfavorable weather conditions as specified under II WEATHER CONDITIONS, of these specifications make it inadvisable to start any flight at the scheduled time, it shall be started within 90 minutes after conditions become favorable, except that no flight will be started after 8:00 p.m. (75th Meridian Time) on any day.

II WEATHER CONDITIONS.

- (a) Weather conditions will be considered favorable for the making of flights when the ceiling at the airport from which the flights are regularly made is reported by the Weather Bureau as being over feet and the visibility as more than miles, unless (1) the official forecast, which will be issued by the Weather Bureau Airport Station, as a trip forecast for every flight, indicates a lowering of the ceiling tofeet or a decrease of visibility tomiles, or a probability of dangerous ice formation on the airplane within three hours; or (2) when it would be necessary to fly into cumu-

lo-nimbus clouds; or (3) when for any other reason the Weather Bureau observer considers the weather or other conditions too dangerous for flying.

III DEFINITION OF FLIGHT-

- (a) A flight will consist of making an airplane ascent (the airplane to be instrumentally equipped as hereinafter set forth), at a rate of ascent not greater than 1000 feet per any three minute period but preferably at a rate of 1000 feet per any five minute period.
- (b) The airplane must level off during the ascent and remain at the 1500 foot level (above ground) for at least one minute and similarly at each succeeding 3000 foot interval, i. e. at the 4500, 7500, 10,500, etc., foot levels (above ground); also at the maximum elevation reached in each flight.
- (c) After reaching the maximum elevation the airplane will return to the ground as rapidly as practicable.
- (d) The place of landing must be at the place of take-off unless weather conditions (as indicated in II WEATHER CONDITIONS, of these specifications), make this impracticable.
- (e) The entire flight must be made, as nearly as practicable, directly over the Airport from which the take-off is regularly made.
- (f) No ascent of less than 3000 feet above ground shall be deemed to constitute a flight within the meaning of these specifications.
- (g) The maximum height of each flight will be computed and determined from the autographic records by standard Weather Bureau Methods. In the event of failure of the meteorograph to record, payment will be made on the basis of the altimeter readings as provided for under IV (f) of these specifications. Such altimeter readings will be corrected, if necessary, by the Weather Bureau, in accordance with the previous general agreement found between altimeter indications and the height as computed in detail by standard Weather Bureau methods.

IV WRITTEN REPORT OF FLIGHT-

The contractor's pilot shall submit to the local representative of the Weather Bureau a written and signed statement containing the following information at the termination of each flight so far as it is practicable to determine.

- (a) Time of entering and leaving clouds, fog and haze; also whether the bases or tops of clouds are referred to.
- (b) Time of beginning and ending of precipitation and kind of latter.
- (c) Time of occurrence, and direction observed, of unusual phenomena such as lightning, thunder, etc.
- (d) Cloud types and amounts, visible above lower cloud layers.
- (e) Whenever clouds are not entered but their distance from the airplane is relatively close, their estimated height as indicated by the altimeter should be given. Such heights should always be indicated as estimated.
- (f) Maximum elevation above ground as indicated by altimeter.
- (g) The pilot will press a button or other similar arrangement for closing the electric circuit for marking the record sheet whenever conditions in (a), (b) and (c) occur.

V EQUIPMENT-AND-PERSONNEL-

- (a) To be furnished by the Weather Bureau.
 - (1) The Weather Bureau will furnish an aero-meteorograph (weight approximately seven lbs.)
 - (2) A representative of the Weather Bureau will place this instrument in position on the airplane before each flight is begun and remove it from the airplane when the flight is terminated.
- (b) To be furnished by the contractor.
 - (1) The contractor shall furnish the necessary airplane, licensed pilot, material and equipment

customary for airplane navigation; also a suitable mounting apparatus for carrying the above mentioned Weather Bureau instrument on the airplane. The position and method of mounting this instrument must be approved by the Weather Bureau representative.

- (2) At places where Government radio-broadcast or radio-range stations are in operation the contractor must equip the airplane making these flights with a suitable radio receiving apparatus, the chief purpose of which is to provide a means of informing the pilot when weather conditions become unfavorable and to keep the airplane over the Airport when the ground is not visible from aloft.

VI PAYMENT-

- (a) Payment will be made at the end of the month, or as soon thereafter as it is possible to audit the vouchers at the U. S. Department of Agriculture, Washington, D. C.
- (b) No additional payment will be made for flights reaching higher than 16,500 feet above ground, but for flights or less than 16,500 feet above ground a deduction from the bid price for a flight of 16,500 feet above ground will be made in accordance with the following scale:

- 15,000 to 16,499 feet incl., a deduction of ten per cent (10%) of the bid price for a flight to 16,500 feet above ground.
- 13,500 to 14,999 feet incl., a deduction of twenty per cent (20%) of the bid price for a flight to 16,500 feet above ground.
- 12,000 to 13,499 feet incl., a deduction of thirty per cent (30%) of the bid price for a flight to 16,500 feet above ground.
- 10,500 to 11,999 feet incl., a deduction of forty per cent (40%) of the bid price for a flight to 16,500 feet above ground.
- 9,000 to 10,499 feet incl., a deduction of fifty per cent (50%) of the bid price for a flight to 16,500 feet above ground.
- 7,500 to 8,999 feet incl., a deduction of sixty per cent (60%) of the bid price for a flight to 16,500 feet above ground.
- 6,000 to 7,499 feet incl., a deduction of seventy per cent (70%) of the bid price for a flight to 16,500 feet above ground.

4,500 to 5,999 feet incl., a deduction of eighty per cent (80%) of the bid price for a flight to 16,500 feet above ground.

3,000 to 4,499 feet incl., a deduction of ninety per cent (90%) of the bid price for a flight to 16,500 feet above ground.

Less than 3,000 feet, no payment will be made for the flight.

(c) While the contractor shall have the right of decision as to whether or not a flight shall be made:

- (1) there shall be deducted from amounts otherwise due him liquidated damages at the rate of 100% of the contract price of one daily flight to 16,500 feet above ground, in accordance with these specifications, for each day's failure to make such flight, when the failure is due to other than unfavorable weather conditions as specified under II WEATHER CONDITIONS, of these specifications;
- (2) there shall be deducted from amounts otherwise due him liquidated damages at the rate of 25% of the contract price of one daily flight to 16,500 feet above ground, in accordance with these specifications, when the flight is started after 5:30 a.m. (75th Meridian Time) or before 4:00 a.m. (75th Meridian Time) unless weather conditions are unfavorable as specified under II WEATHER CONDITIONS, of these specifications;
- (3) there shall be deducted from amounts otherwise due him liquidated damages at the rate of 25% of the contract price of one daily flight to 16,500 feet above ground, in accordance with these specifications, whenever a delay of more than 90 minutes occurs before the flight is started after weather conditions change from unfavorable to favorable as specified under I SCHEDULE OF FLIGHTS, (c), of these specifications.

Weather conditions are unfavorable as indicated under II WEATHER CONDITIONS, of these specifications.

VII CONTRACT-

Each bidder must furnish a guarantee bond or certified check drawn in favor of Disbursing Clerk, U. S. Department of Agriculture, as security in the amount of

\$300.00 guaranteeing that he will not withdraw his bid within 30 days after the opening of same and that he will, if awarded the contract, execute formal contract and bond, such bond to be in the amount of \$3000.00.

VIII GENERAL

- (a) The pilots making these flights must hold a transport pilot's license and have had at least 100 hours of night flying, except in those flights where no "blind" flying is necessary; the airplanes used must have been duly inspected and approved by the U. S. Department of Commerce.
- (b) The contractor will not be required to carry a Weather Bureau representative in the airplane making these flights.
- (c) The contractor shall, without additional expense to the Weather Bureau, obtain all required licenses and permits and be responsible for all damages to persons and property that occur as a result of his fault or negligence in connection with the prosecution of the work.
- (d) The contractor shall be required to taxi the airplane to within 300 feet of the Weather Bureau Airport station before and after the flight for the purpose of having the instrument mounted and removed from the airplane. (See (V) EQUIPMENT, (a), (2) of these specifications.)
- (e) The flight shall be made at the
.....Airport.
- (f) If the contractor fails to attain a height of 10,000 feet above ground, on more than three days during any 30 consecutive days, for reasons other than unfavorable weather conditions, as specified under (II) WEATHER CONDITIONS, of these specifications, or for any other reason fails to perform satisfactorily the airplane service required herein, the Weather Bureau may procure such service in the open market and the contractor and his sureties will be held liable to the Government for any excess cost over the contract rate occasioned the Government thereby.
- (g) The Weather Bureau reserves the right to reject any or all bids.